

ABSTRACT

A system for plasma processing using electron-free ion-ion plasmas, wherein the substrate bias waveform is synched to a pulsed RF drive. A delay is included between the end of an RF drive pulse
5 and the start of a bias pulse, to allow the electron population to drop to approximately zero. By using a source gas mixture which has highly electronegative components, substrate bombardment with negative ions can be achieved.

Approved for Release